DOCUMENT RESUME

ED 221 978 EC 150 045

AUTHOR Crawley, Susan B.; Spiker, Donna
TITLE Mother-Child Rating Scales.
INSTITUTION Illinois Univ., Chicago.
SPONS AGENCY Illinois State Dept. of Mental Health and Developmental Disabilities, Springfield.
PUB DATE [82]
NOTE 24p.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Behavior Rating Scales; Cognitive Development; *Downs Syndrome; *Mothers; *Parent Child Relationship; Student Characteristics; Young Children

ABSTRACT

Development and use of a rating scale to code videotaped mother-child interactions involving 1-year-olds with Down's syndrome are described. It is explained that the ratings were developed to describe individual differences in directiveness and sensitivity in mothers and social and cognitive maturity in the children, with a measure of mutuality or harmony shown by the mother-child dyad. Ten child qualities rated on 5-point scales are described and examples are given: level of play maturity, social initiative, social responsivity, degree of interest in toys/free play situation, object activity initiative, expressed positive affect, expressed negative affect, locomotion, animation, and child appeal. Six mother qualities using multipoint scales are also described: directiveness/control, elaborativeness, sensitivity, stimulation value, mood, and mother appeal. Forms of mutuality as measured in the dyadic rating are described. (CL)

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Mother-Child Rating Scales[1]

Susan B. Crawley
University of Illinois at Chicago

and

Donna Spiker
University of Chicago

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Mother-Child Rating Scales

Susan B. Crawley & Donna Spiker

The following is a rating scale developed for coding videotaped mother-child interactions involving two-year-olds with Down syndrome. The scales tap ten maternal, ten child, and one dyadic quality. The mother qualities focus on dimensions of directiveness and sensitivity, as these are qualities many researchers have found to discriminate mothers of handicapped children from mothers of normally developing children. These ratings were developed in order to (a) enable us to describe individual differences in directiveness and sensitivity within a sample of mothers of handicapped children, and (b)allow us to examine subcomponents of directiveness and sensitivity, such as intrusiveness, developmental appropriateness, pacing, and elaborativeness. The child ratings focus on social and cognitive maturity exhibited during the play interaction, affective expression, and level of interest shown in the observation context. The dyadic rating is a measure of mutuality, or harmony shown by the dyad. Most of the scales are Likert 5-point scales. One scale (maternal mood) is a 7-point bipolar scale, and four mother scales involved dichotomous ratings of appropriate/ inappropriate behavior.

Development of the Rating Scales

Videotaped interactions of both normally developing and Down syndrome children interacting with their mothers were used to develop the rating scales. The normally developing children ranged in age from 13 to 28 months, and the Down syndrome children ranged in age from 18 to 48 months. Thus, the scales should be useable with children with developmental ages between 13 and 36 months.

After the scales were developed, they were used to code 18 videotapes of 24-month-olds with Down syndrome playing with their mothers. These dyads were videotaped in their homes playing with toys provided by the observer (i.e., playing with: 1. plastic nesting cups, 2. xylophone and stick, 3. miniature bus and people, 4. stacking rings, 5. miniature stove and dishes, and 6. two very simple picture books). The

first ten minutes of each videotape was independently rated by two raters. The raters first viewed all 18 tapes in order to become familiar with the interaction patterns characteristic of the two-year-old sample. They then rated the child ratings. Each tape was viewed twice, with ratings being made after the second viewing. About six weeks later, the raters again viewed each tape twice, following which they rated the mother ratings. The mutuality rating was rated by rater #2 and a third rater at a still later point in time. This procedure was used in an attempt to enhance the probability of the raters independently rating child, mother, and dyadic qualities (or, conversely, to minimize "halo" effects in rating).

Interobserver percent agreement within one point was calculated for the multipoint scales, while exact agreement was determined for the dichotomous ratings (on the two-year-old data). Percent agreement for each rating is presented with the rating definitions below. The two raters resolved their disagreements through discussion and through viewing the tapes a second time. The child social responsivity rating was rewritten at this time, due to the low reliability obtained during initial coding. Disagreements were not resolved for the mother appeal and child appeal ratings, because these were intended as purely subjective observer ratings.

Child Ratings

Ten child qualities are rated using 5-point scales.

1. Level of Play Maturity (94%)

This is a rating of the level of play observed during this interaction, not the level the child may be capable of. The examples described below are based on play actions characteristic of the specific toys used in the two-year-old study.

1: All of the child's actions consist of very simple behaviors that can be applied to most objects indiscriminately, e.g., holding, mouthing, banging (single object on floor, not two objects together), shaking, or throwing. No evidence of ability to relate two objects; no evidence of ability to perform object-specific actions (e.g., twist dial on stove; peek through ring).

2: Child shows evidence of ability to see relationships between two objects. Performance is very uncoordinated and clumsy, however, and child may need prompting in order to correctly relate the two objects. Examples: (a) Xylophone--clumsy banging; may hold stick incorrectly; may miss notes. (b) ring and stack--may touch ring to stack without prompting; clumsy attempts to get ring on stack; may succeed with extensive prompting. (c) bus and people--may touch people to bus without prompting; clumsy attempts to get people in bus; may have success with prompting. (d) blocks--bang blocks. (e) nesting cups--touch one cup to another; (f) dishes--touch spoon to cup; touch lid to top of pitcher. Child may do some object-specific actions, as long as these are very simple, e.g., look at pictures in book, turn pages in book.

3: Child is able to coordinate two objects smoothly in manner intended by manufacturer with minimal prompting. Most actions are one step coordinations, however. Examples: (a) rings and stack--no problem putting one ring on; may need prompting to continue.; can take ring off. (b) xylophone--can hit one note consistently, doesn't miss; (c) dishes--puts lid on pot; can put objects inside cup, etc. (d) nesting cups--can put one inside the other; may need help --a little clumsy. (e) blocks--can stack two. Child is able to perform more complicated object specific actions, e.g. (a) stove--twist dials; (b) xylophone--push, pull. (c) book--attends to mother's discussion; occasionally points to pictures in response to mother's requests. Child shows evidence of pretending, i.e., may pretend simple self-directed actions such as drinking from a cup, eating from a spoon.

4: Child is able to perform multiple-step coordinations smoothly without prompting. Examples: (a) rings and stack--puts many on in a row (can take off and put on the last ring, a ring that is hard to get on); does not put rings on in right order. (b) xylophone--plays different notes consecutively; "glissando"; may imitate progression performed by mother ; may turn-take, i.e., voluntarily offer mother a turn. (c) nesting cups--can put inside each other smoothly; can put in many consecutively, but not necessarily in correct order. Child

shows evidence of other-directed pretending and pretending involving two to three-step sequences, e.g., stirring "food" in the pot, cooking on the stove, offering food to mother. Pretending is more spontaneous (i.e., independent of maternal prompting) than in #3.

5: Much of the play may revolve around multistep pretend. More of a clear fantasy element, rather than isolated pretend actions. With toys that do not elicit pretend, e.g., nesting cups, rings, child easily performs actions perfectly (e.g., attends to correct order of placement of cups). Child may include nonpretend toys in pretend actions (e.g., build garage with blocks, park bus in garage).

2. Social Initiative (89%)

This is a rating of the degree to which the child initiates social interactions with the mother. Frequency, intensity and variety of initiations are considered in making the rating. The following behaviors are considered initiating behaviors: looking at mother (when not preceded by a maternal behavior eliciting looking), looking and vocalizing (or talking), looking at mother and pointing, offering mother an object (spontaneously--without prior prompting), pulling on mother to get her to do something. Vocalizing without looking at mother is not considered a social initiation.

1: No social initiative: Child never performs a social initiating behavior. Child is engaged in own activity, or responding to mother's activity.

2: Child initiates once or twice. Initiation is of low intensity (a look, or a look plus vocalization).

3: Child initiates 3 to 5 times. The majority of the time the child is engrossed in own activity, ot responsive to mother's activity. Intensity of initiations is moderate, e.g., may touch mother, move toward mother

4: Child initiates frequently and consistently throughout session. Variety of initiating behaviors used, e.g., pointing, offering objects, talking to.

5: Child initiates very frequently, using a variety of initiations. Child is almost

constantly initiating.

3. Social Responsivity (78%; this rating was revised after the reliability estimate was taken)

Degree to which child positively responds to maternal initations. Includes frequency, duration, quality, and latency of response. An attempt to carry out a request, even if not successful, is considered a positive response.

1: Consistent attitude seems to be one of either ignoring mother (mother's requests), or of active noncompliance (running away, throwing toys away). May give brief, low intensity responses (e.g., a look) occasionally, but usually occurs in response to persistence on part of mother. May occasionally cary out tasks--but only in response to persistence on the part of the mother.

2: Throughout most of the session, child is not responsive. May ignore and/or show active noncompliance frequently. Child does . show sustained responsivity during one or two activities, however.

3: Child attempts to respond to many requests--but also ignores many and/or actively noncomplies. Some persistence on mother's part may be necessary to get child involved in each task, but once attention is gained, child is moderately responsive.

4: Child attempts most requests; some active compliance; But ignores some requests intentionally. No active noncompliance.

5: Child attempts to respond to all requests. Latency of response is brief.

4. Degree of Interest in the Toys/Free Play Situation (94%)

This is a rating of the extent to which the toys provided by the experimenter captured the child's attention/interest. In a sense, it is also a rating of the child's compliance with the demand constraints of the observational situation (i.e., the demand constraints of a free play situation require that children show an interest in engaging in toy play; children who show no interest in playing with the toys are not cooperating with the experimenter's intent). In rating interest, the observer should weigh two factors: the total duration of toy-oriented behavior, and the frequency, duration and intensity of behaviors suggesting an active disinterest in playing with the toys. Toy-oriented behaviors consist of looking at toys (toys possessed by the mother; toys possessed by the child; toys laying on the floor or in the toy box) and manipulating toys (exploring toy; performing activities on toys; does not include passively holding toy while attending to something else). Behaviors suggesting disinterest are: staring at other parts of the room (e.g., camera, door), crawling or walking away from the scene (without bringing a toy with him/her); actively resisting maternal attempts to elicit interest in the toys (e.g., shaking head "no", turning away from mother, pushing toy away); using neagative behaviors with toys (e.g., throwing, pushing away, scattering toys, when intent is to get rid of toy, rather than to perform part in a game).

The observer should keep in mind that this is a rating of child interest in playing with the toys in general--not a rating of child interest in the mother's toys (i.e., a child who ignores maternal attempts to elicit interest in her toy because he/she is involved in his/her own toy would be regarded as showing toy interest). Also, quality of interest is not relevant (i.e., passive watching of mother's toy activity and active manipulation of own toy would be coded similarly).

1: No interest: Child does not seek out any of the toys himself/herself. If left to his/her own devices, he/she either stares blankly into space, or crawls around. When the mother attempts to elicit attention to toys, the child may take a brief look; child may reach out and take the objects, but casts them aside after a brief look. When mother tries more persistent measures, the child actively resists by crawling away, looking away, pushing toy away, etc. Regardless of mother's persistence, child never shows any sustained attention to mother's activity, and never engages in any activity of his/her own with the objects.

2: Slight interest: Child may occasionally (3 or 4 times) seek out and manipulate a toy (or accept a toy from mother), but attention is usually of brief duration (may perform one or two actions on a toy, and then cast aside). Child complies with maternal attempts to elicit attention once or twice--but again, attention is of short duration. Child may have one period of sustained attention to a toy--but only as a result of maternal persistence.

3: Moderate interest: Child sustains attention to more toys for longer periods than in #2, but still inattentive. Child spends about half the time attending to toys (either his own, or in response to maternal elicitation). Child is able to attend to/manipulate toys for short periods, following which he either spaces out or crawls away. Child regains attention (either voluntarially or through maternal prompting) after lapses in attention . Much of the attention displayed my have been maternally prompted initially.

4: Strong interest: Child spends most of his time attending to/acting on toys. For the most part, attention is voluntary. There are occasional periods when the child stares at other parts of the room, or tries to leave the scene. However, child usually reattends on his/her own without maternal prompting, or with very light prompting.

5: Very strong interest: Child spends entire time engrossed in toys. While attention may shift from toy to toy, there are no clear lapses in attention.

5. Object Activity Initiative (94%)

Degree to which the child initiates object-related behaviors on his/her own (independent of maternal prompting) that could be regarded by the mother as leads or activity initiations. Examples: Child looks at, points to, grasps, or manipulates objects independent of prior prompting by mother; child performs a new, independent action on an object (even though the mother may have originally supplied the object). The purpose of this rating is to distinguish children who actively engage in independent object activity from those who are either respondents to mother's directives, or totally passive.

1: Never initiates an object activity. Child is either totally passive (i.e., doesn't act on objects), totally disinterested in the toys (running around, etc.), or all child's actions are responses to maternal prompting.

2: Child engages in low intensity object initiation one to three times. Child may pick up objects that are lying within reach and hold/inspect briefly. Child may perform one or two novel independent actions on a toy presented by the mother. For the most part, however, child does not actively seek out toys himself/herself; child's toy actions are responsive.

3: Child performs at least one novel independent action on almost every toy presented by mother. Child picks up toys lying about independent of maternal prompting. Child may actually initiate a new toy sequence by pointing toward a toy that hasn't been used, crawling to get a toy, or looking in toy box. Child may refuse/fail to comply with maternal prompts on toy because he/she is performing his own independent action.

4: Child performs a number of independent acts on each toy. About half of the child's actions are self-initiated. Child may be playing with mother, but it is clear that child's contribution is his/her own, not simply a response to a maternal prompt. Child may be engaged in solitary play--oblivious to mother.

5: Almost all child's actions are independent. Performs a number of acts on each toy. Almost all of the toys were originally obtained by child. Mother's role necessarily is one of observer/commenter, elaborator, or one of prompting without success.

6. Expressed Positive Affect (94%)

Child smiles, laughs, squeals, shows affection toward mother (hugs, kisses), or shows pride in accomplishments by clapping hands.

1: None

2: Child smiles once or twice. May clap once or twice. Expressions are of very low intensity, are very brief, and are not consistent. Does not exhibit more intense forms of positive affect (e.g., laughter, hugging).

3: Child has periods when he/she expresses positive affect. This may be manifest in one of two ways: (a) 3 to 5 brief smiles consistently interspersed throughout the session. Smiles are more definite and of greater intensity than in #2; or (b) smiles of longer duration and/or more intense forms of affect emitted during a single period during the session--with the child exhibiting either neutral or negative affect during the remainder of the session. Characteristic expression, however, is not positive.

4: Very frequent smiling, claps, etc. Smiling occurs consistently throughout session. May have one bout of more intense affect, e.g., laughter, but for the most part, affect is of moderate intensity--but frequent and consistent. Characteristic expression is positive affect.

5: Very frequent smiling and 2 or more bouts of intense affect, e.g., laughter. Characteristic expression is positive affect.

7. Expressed Negative Affect (94%)

Child whines, fusses, cries, screams, frowns, or uses negative gestures (e.g., angrily pushes toys away). Since videotaping was discontinued in cases where children exhibited intense, long duration negative affect, the upper limit of this rating is somewhat depressed. Child may be coded as expressing both positive and negative

affect (e.g., labile children).

1: None.

2: Child whines, frowns, or uses a negative gesture once or twice. Does not exhibit more intense forms of negative affect.

3: Three to five whines, frowns, negative gestures interspersed throughout session. Child's expression is not characteristically negative, however.

4: Very frequent whines, frowns, negative gestures consistently interspersed throughout session, or one period or more intense negative affect, e.g., crying.

5: Very frequent frowns, negative gestures, with some high intensity negative affect, e.g., one bout of active crying, or temper.

8. Locomotion (94%)

This is a rating of child movement from one place to another. It includes frequency and duration of movement, as well as a measure of the amount of space covered by child. Includes crawling, scooting, walking, rolling.

1: Child sits in one place the entire session.

2: Child moves once or twice--very brief distances, very brief duration, e.g., child scoots over to box to get toys, child crawls toward toy or mother.

3: Child engages in more frequent short distance (brief duration) movements, or child performs one or two long distance movements (e.g., crawling away from scene). Latter may be thwarted by mother.

4: Child performs long duration, long distance movements three or four times. Wanders around room, etc. Child also may perform a number of brief duration-brief distance movements. A noticeable percentage of the session involves locomotor movement.

5: Child performs many long distance-long duration movements. At least 50% of the time, the child is moving about.

9. Animation (94%)

Alertness of facial expression and body tone. Energy level; level of arousal.

1: Dull, lifeless facial expression; glassy-eyed; slow, lethargic, listless movements. Child appears to be very unenergetic. Child appears to have low muscle tone.

2:

3: Facial expression alert, bright-eyed, but not particularly animated. Child has moderate energy. Puts enough energy into play to accomplish goals. Moves at moderate speeds (both fine motor and gross motor movements).

4:

5: Alert, bright-eyed, animated facial expression; active, energetic, vigorous movements. Child appears to put a lot of energy into play. Moves quickly. Appears enthusiastic.

10. Child Appeal (94%)

Subjective rating of the child's appeal, from the rater's point of view. Rater's asked themselves the question: "How much would I like to take this child home with me?" Rated on a 5-point scale.

Mother Ratings

Six mother qualities are rated using multipoint scales. All are 5-point scales, with the exception of mood, which is a 7-point bipolar scale.

1. Directiveness/Control (89%)

Level of directiveness (i.e., the extent to which mother tries to get the child to do what she wants him/her to do, or to guide child's behavior) exhibited by mother during the play session. Intensity, as well as frequency should be considered together in rating directiveness. A single request, such as "Can you put the ring on the stack?" is more like a suggestion than a directive. Mothers who use a moderate number of these would get a low directiveness rating.

Commands that are repeated frequently and accompanied by gestures and/or physical guidance are high intensity dierectives. A mother who uses a few of these would receive a high directiveness rating. Directiveness should not be confused with intrusiveness. Some directive mothers use directives sensitively, while others are intrusive.

1: Mother occasionally suggests that child perform a particular activity. Directives are phrased as questions. If child does not comply, mother does not persist. Mother primarily watches (and/or comments), entertains, or elaborates on child's play.

2: Mother uses question forms more frequently, and occasionally gives a command. If child does not comply, mother may repeat once or twice (shows some persistence). Mother's general style is still watch/comment, entertainment, or elaboration.

3: Mother uses command forms more frequently, but still uses a lot of question forms, and is more persistent in requesting compliance. Mother repeats directives more frequently. May have "directive episodes" interspersed with watch/comment, entertainment, or elaboration.

4: Mother uses command forms very frequently. Mother directs throughout session. May use physical guidance. More persistant. More repetitions. More demanding of correct response.

5: Mother is highly directive. Directs almost all child actions. Very persistent.

2. Elaborativeness (94%)

The extent to which the mother follows and elaborates on the child's self-initiated behaviors (behaviors that the child performs independent of maternal prompting). Both the frequency and the quality of maternal elaborations was considered in rating elaborativeness (e.g., a brief comment on a child self-initiated behavior followed by a return to the mother's own agenda would be considered a

low quality elaboration, while use of behaviors that creatively complement and extend the child's action would be considered high quality elaborations). Frequency of maternal elaborations are considered in the context of the number of opportunities the child provides the mother. In cases where the child is very passive, and never performs a self-initiated behavior, elaborativeness is not rateable. Elaborativeness is not synonomous with sensitivity. While most elaborative mothers are sensitive, many sensitive mothers are not very elaborative.

1: Never complements/extends her child's behaviors, or responds negatively (i.e., prohibits child from performing independent behaviors).

2: Often ignores child's leads. May acknowledge one or two independent behaviors by commenting, but then returns to her own agenda (watching, directing, or entertaining).

3: Responds to most independent behaviors, but briefly, and then returns to own agenda.

4: Responds to some independent behaviors by extending child's behavior/following. Others--acknowledges briefly. In cases where mother follows child, however, she may shift control from child to self.

5: Responds to most of child's behaviors by extending or expanding. Most of mother's behavior follows child. May play more of a supportive/assistive role. Frequent use of behaviors that complement ongoing activity--usually without trying to regain control.

3. Sensitivity (89%)

The degree to which the mother's behavior is in tune with that of the child; the degree to which the mother's behavior reflects awareness of her child's cues or signals. Includes a number of qualities, some of which are rated separately in this scale, i.e., intrusiveness, developmental appropriateness, pacing, and readability (organization, clarity) of mother's behavior. A mother rated

high on sensitivity shows two characteristics: (1) when she initiates (either to direct or elaborate on child's behavior), she does so in a way that shows awareness of child's current activity, developmental capabilities, and affective state; she insures that child is properly oriented to the task, makes her intentions clear, and gives the child sufficient time to respond to her initiations; (2) when the child initiates to the mother, she responds appropriately. A mother rated low on sensitivity may show extreme forms of the following: intrusiveness, rejection of the child's behavior, developmental inappropriateness, disorganization or rapid pacing.

1: Mother is very insensitive. Initiations are intrusive or out of synchrony with what the child is doing. Pacing is usually too fast. Mother never follows child's leads, either by being oblivious to them, or by rejecting them. May or may not be developmentally appropriate.

2: Pacing usually too fast, but not as fast as in 1. May occasionally acknowledge child's leads, but only briefly. May occasionally pick up on child's signals. Often initiates without considering child's state, or ongoing behavior.

3: Some clear moments where mother is sensitive toward child, but mother still behaves insensitively on many occasions. About half of the mother's initiations are sensitive, half are not. Mother responds appropriately to some child initiations, but ignores many.

4: For the most part, mother is sensitive and responsive, but one or two elements may be slightly off for very brief periods during the session, e.g., mother may be too persistent in one instance, may pitch one activity at a developmental level that is a little too high, may not wait long enough for child to respond on one occasion.

5: Mother is very sensitive in picking up on child's cues, i.e., responds appropriately to child social initiations, is willing to give up own agenda to respond to child, orients child before directing, waits for pause in chid's

activity before directing, etc.

4. Stimulation Value (100%)

The degree to which the mother's participation in play provides optimal cognitive stimulation for the child. In a sense, this rating encompasses optimal combinations of ratings 1-3, with a particular focus on enhancing the child's learning. That is, mothers must show at least a minimum level of sensitivty for her behavior to provide stimulation value. Similarly, the mother must show a minimum level of either directiveness, elaborativeness or both in order to provide stimulation value. Mothers assigned any given scale point may vary considerably in style however.

1: Mother's imput does not appear to provide any stimulation value for the child. Mother is either highly insensitive (may be intrusive, disorganized, etc.) or extremely inactive in the child's play (i.e., the mother merely observes, or gives comments that provide little stimulation value).

2:

3: Mother's input provides moderate stimulation value. Mother may be somewhat overbearing, but not to a degree as to preclude child from gaining stimulation value from input, or mother may be somewhat passive/uninvolved but not to the point of precluding child from obtaining stimulation value, or mother may be active in child's play, but relatively uncreative/blah.

4:

5: Mother's input appears to provide optimal stimulation value for child. Includes mothers showing the following patterns of behavior: (a) the mother is very directive, yet uses directives in a sensitive manner such that she creatively guides the child in the performance of tasks (i.e., the "good teacher" mother), (b) the mother who creatively elaborates on the

child's play in a way that potentially enhances the child's cognitive development, and (c) the mother who combines directive and elaborative strategies in creative ways.

5. Mood

Expressed feelings toward child.

Positive: Warm tone of voice, expressive voice, smiling, laughter, physically expressed warmth. Acceptance of child, relaxed, at ease, or enthusiastic, corrections are expressed positively. (Acceptance even when correcting). Praise.

Negative: Expressions of disapproval, tense body, negative voice when correcting, abrupt, tense facial muscles-strained expression, flat voice-unexpressive voice.

-3: Voice clipped, slight expression of anger, hostility in voice. Frequent expressions of disapproval-nonacceptance of child's behavior. Negative tone when correcting, tense facial muscles-strained expression. No expression of warmth. No expressions of praise.

-2: Tense, dissatisfaction with child, irritable, voice not hostle or angry - but not warm. Clipped voice. Flat voice - no expression of warmth in voice. May have one or two very brief expressions of low intensity positive feeling. May be some false positive feeling shown.

-1: Slight tension, some acceptance of child - but some nonacceptance. Voice usually flat, cold-perhaps one or two positive inflections. Generally neutral - leaning toward negative.

0: Flat, bland expression. Some inflection but very little. May seem detached. May have brief slight positive.

1: Slightly positive: Some neutral expression. Some positive expressions toward child. Warm voice - some praise. One or two smiles toward child. Less involved than higher ratings. No physical. No real enthusiasm. No laughter.

2: Generally positive expression. Some big smiling. Very warm voice. Praise - generally expressed. Playful mood. Some laughter. More enthusiasm. Physical expressions. Acceptance.

3: Very expressive voice. Laughter, physical expressions (hugs). Enthusiasm. Smiles, jokes, playful.

6. Mother Appeal (100%)

A subjective rating of the mother's appeal, from the rater's point of view.

Four maternal qualities are rated as dichotomous judgements. These qualities are regarded as separable components of maternal sensitivity.

1. Pacing (89%)

Rate with which mother changes activities, makes verbal requests or comments, or elaborates on child's play. Appropriateness is considered in the context of the child's demonstrated ability to keep up with the mother.

1: Appropriate pacing: Mother gives child sufficient time to perform activity without imposing a new directive, or a new activity. Mother is patient, and sensitive to pauses, i.e., intervenes at pauses in child's activity, rather than while activity is ongoing.

2: Inappropriate: Mother is impatient on at least some occasions. Child cannot keep up with mother's demands. Mothers introduces new activities before child is finished with old activities on at least some occasions.

2. Developmental Appropriateness of Play (83%)

Degree to which mother's directives and elaborations are appropriate to the child's cognitive and motoric level of development.

1: Appropriate: Mother pitches activity either at child's level (i.e., child can easily do) or slight above child's level (i.e., child shows some evidence of being able to perform activity, but may need help). All of mother's behavior is developmentally appropriate.

2: Inappropriate: Mother pitches at least one activity way above child's level, or mother consistently pitches activities at a moderately high level, such that child consistently experiences difficulty in performing activities. e.g., Mother engages in elaborate "tea-party" with child who shows no evidence of pretend capabilities; mother consistently requires nonverbal child to label objects.

3. Readability of Mother (83%)

Degree to which mother makes her intentions clear to the child (and the observer). Involves organization, clarity of behavior, and coherence of action.

1: Appropriate: Mother seems organized and to have a plan. Actions seem to have a purpose (i.e., mother does not use aimless actions). Directives are clearly expressed (i.e., sufficient repetitions, referents clear, speech clear, appropriate to context, language simplified, sufficient use of nonverbal supports-gestures. Mother assumes a clear role in relation to the child.

2: Inappropriate: Mother may use at least some unclear aimless actions, at least some intentions are not clear, mother seems somewhat disorganized. Observer has difficulty figuring out what mother is trying to do.

4. Intrusiveness (83%)

Degree to which mother's directive and/or elaborative behaviors abruptly interrupt child's ongoing action.

1: Appropriate: Mother never abruptly interrupts her child's ongoing activity. When the mother uses directive techniques, they are subtle so as to encourage the child's voluntary participation in new activities.

2: Inappropriate: Mother abruptly intrudes upon her child's play at least occasionally (e.g., by grabbing objects her child is using, shoving objects into her child's space, dragging her child away from toys, or acting on her child's toy in a way that disrupts the child's activity).

Dyadic Rating

One 5-point dyadic rating is coded.

1. Mutuality (83%).

Both partners are attending to the same toys and/or activity. Both partners appear to be in sinc, or in harmony with each other. There is mutual acceptance of initiations and responses emitted by the other. There is no evidence of discord. Actions are contingent.

Mutuality may take many forms, e.g.:

1) Mother may watch child act,

2) Child may watch mother act,

3) mother may watch and comment on child's activity. Comments must be contingent upon child's activity, however,

4) Mother may watch, comment upon, and make suggestions regarding child's activity. Child must minimally respond (i.e., look at mother, attempt to perform mother's request) to some (but not necessarily

all) of the mother's requests in order for sequence to appear mutual. In cases where mother accepts child noncompliance with her requests and either moves on to a new request or follows child's action - sequence should be regarded as mutual.

5) Mother may direct child's behavior extensively and child may comply with directives. (i.e., mother may direct each step of a task sequence, e.g., direct each step of putting rings on stack, cups in nesting cups, etc.).

6) Turntaking - back and forth exchanges may occur.

7) Child may wander off - initiate action with new toy - and mother may follow.

Key to mutuality is contingency, mutual intentions, or harmonious intentions.

Nonmutuality may take many forms:

1) Mother comments that bear no relation to child's activity.

2) Mother use of requests that are: vague, unclear, developmentally inappropriate, paced too rapidly, not repeated often enough, bear no relation to ongoing activity,

3) Mother interruption of child activity,

4) Mother displays of consistent disapproval/nonacceptance of child behavior,

5) Child consistent ignoring/turning out of mother

6) Child active resistance/conflict.

1: Virtually no mutual - most of interaction has qualities described by nonmutual definition. May have one or two very brief mutual attention episodes - But even these are somewhat out of sinc (i.e., not clear that even these are really mutual).

2: Vast majority is not mutual. Some longer duration episodes of mutual. These episodes may be borderline mutual/nonmutual.

3: Half the time mutual, half nonmutual. Mutual is reasonably clearly mutual - although some of mutual may be borderline, or consistent borderline mutual.

4: Majority is mutual. Mutuality is clear. May have one or two periods of nonmutuality (usually at beginning, or end of tape), or a number of brief nonmutual during toy changes.

5: Entire session is mutual. Mutuality is clear.

Footnote

[1]This research was supported in part by a Research Board grant awarded to the first author by the University of Illinois at Chicago, and by a grant from the Illinois Department of Mental Health and Developmental Disabilities awarded to the first author. The second author was a post doctoral scholar at the Illinois Institute for Developmental Disabilities and the University of Illinois at Chicago at the time the research was conducted. Many of the videotapes used in developing the rating scales were collected by Jerry Mahoney at the University of California, Los Angeles. Dr. Mahoney was supported by Project REACH, an Early Childhood Handicapped Institute funded by the U.S. Office of Special Education. We would like to thank Mara Werner, Emy Lou Weller, and Iris Finger for their contribution to the collection of the videotaped observations. We would also like to thank Mara Werner, Lilian Glikburg, Delores Wedgeworth and Roseanne Clark for their assistance in developing the rating scales. Special thanks goes to the personnel of the many parent-infant programs who assisted us in recruiting parents. We would like to express our greatest appreciation to the many mothers and children who so generously participated in this project.